CLAIMS

1. A method of transporting a parcel of data by an intermediate network element, the method comprising the steps of:

engaging in a protocol exchange with at least one of a data source and a data target to schedule at least one of receipt of the data parcel from the data source and transmission of the data parcel to the data target;

receiving for forwarding the parcel of data by the intermediate network element having network element storage;

storing the parcel of data in the network element storage in coordination with at least one of said data source and data target; and

forwarding the parcel of data.

2. The method of claim 1, wherein the parcel is larger than 1 Gigabyte of data.

3. The method of claim 1, wherein the step of receiving for forwarding takes place by receiving the parcel from a first link with a first bandwidth, wherein the step of forwarding takes place by transmitting the parcel of data on a second link with a second bandwidth, and wherein the first bandwidth is greater than the second bandwidth.

4. The method of claim 1, wherein the step of receiving for forwarding takes place by receiving the parcel from a first link with a first bandwidth, wherein the step of forwarding takes place by transmitting the parcel of data on a second link with a second bandwidth, and wherein the second bandwidth is greater than the first bandwidth.

5. The method of claim 1, wherein the step of storing the parcel of data allows data from the parcel of data to accumulate in the network element storage for more efficient subsequent transmission during the step of forwarding the parcel of data.

6. The method of claim 1, wherein the step of forwarding the parcel causes the parcel of data to be transmitted toward the data target, and wherein the method further comprises the step of forwarding the parcel of data toward a second data target.

7. The method of claim 1, wherein the step of engaging in a protocol exchange enables the network element to participate in control of the data transmission between the data source and data target.

8. The method of claim 1, wherein the step of engaging in a protocol exchange comprises coordinating the transfer of the parcel of data between the data source and data target.

9. The method of claim 1, wherein the step of engaging comprises managing the transfer of the parcel of data between the data source and data target.

10. A network element with network element storage, comprising:

network element storage configured to store data semi-permanently on the network; and

control logic configured to facilitate transmission of a parcel of data from a data source to a data target by causing the parcel of data to be stored intermediate the data source and data target; and

control logic configured to interface with at least one of another network element, the data source, and the data target, to participate in the transmission and storage of the parcel of data intermediate the data source and data target in connection with a transmission of the parcel of data from the data source to the data target.

11. The network element of claim 10, further comprising ports configured to receive transmissions and a switch fabric configured to transmissions between the ports.

12. The network element of claim 10, wherein the control logic is further configured to implement an emulation module to enable it to emulate at least one of a data source and a data target.

13. The network element of claim 10, wherein the control logic is further configured to provide status information to at least one of the data source and data target, said status information being associated with the transfer of the parcel of data through the network.

14. The network element of claim 10, wherein the control logic is further configured to replicate data for transmission to more than one data target.

15. The network element of claim 10, wherein the control logic is further configured to schedule a transfer of the parcel of data between at least one of the data source and network element, and the network element and the data target.

16. The network element of claim 10, wherein the control logic is further configured to identify the parcel of data from flows on a communication network.

17. The network element of claim 10, wherein the control logic is further configured to perform at least one of source registration and target registration.